CLAIMS

The following is claimed:

1   1.   A system for improving communication between a switched network and a packet

2   network, comprising:

3   a signaling gateway for converting signaling in a first protocol to a second protocol, and

4   from said second protocol to said first protocol;

5   at least one media gateway for converting multimedia provided in a first format into a

6   second format, and from said second format into said first format;

7   a session router for selecting at least one multimedia transmission route to a destination,

8   said destination being specified by said switched network; and

9   a media router for guiding said multimedia to said destination after conversion by said

10   media gateway.

1   2.   The system of claim 1, wherein said first format is a time division multiplexing

2   format and said second format is a real time protocol format.

1   3.   The system of claim 1, wherein said media gateway does not determine the

2   destination of said multimedia.

1   4.   The system of claim 1, wherein said first protocol is signaling system number

2   seven and said second protocol is a session Internet protocol.

1   5.   The system of claim 1, wherein said second protocol is real time protocol.

1   6.   The system of claim 1, wherein said packet network is an Internet protocol

2   network.

1   7.   The system of claim 1, wherein said switched network is a public switched

2   telephone network.

8.   The system of claim 1, wherein said first format is a time division multiplexing

format.

9.   The system of claim 1, wherein said second format is a real time protocol format.

10.   The system of claim 1, wherein said switched network communicates with said

2   signaling gateway via use of signaling system number seven.

1   11.   The system of claim 1, wherein said signaling gateway comprises a memory that

2   may be utilized for converting a received circuit identification code into a session description

3   protocol header.

1   12.   The system of claim 11, wherein said session description protocol header is

2   utilized by said destination, located within said packet network, to direct data packets to said

3   media gateway.

1   13.   The system of claim 11, wherein said session description protocol header

2   comprises an Internet protocol address and port for said destination.

1   14.   The system of claim 1, wherein communication between said session router and

2   said signaling gateway is performed via use of session Internet protocol signaling.

1   15.   A method for establishing a call from a switched network to a user agent within a

2   packet network, comprising the steps of:

3   transmitting an initial address message from said switched network to a signaling

4   gateway;

5   converting at said signaling gateway said initial address message to a session Internet

6   protocol invite message;

7   transmitting said Internet protocol invite message to a session router, which analyzes said

8   Internet protocol invite message to determine a best route to said user agent; and

9   opening a media router address and port, within a media router, for multimedia

10   transmission from said user agent to said switched network, as a result of a request from said

11   session router.

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1   16.   The method of claim 15, wherein said switched network is a public switched

2   telephone network.

1   17.   The method of claim 15, wherein said initial address message comprises a circuit

2   identification code that identifies a bearer channel reserved by said switched network to

3   communicate with said user agent.

1   18.   The method of claim 15, wherein said initial address message comprises

2   information regarding a calling party, a called party and a circuit identification code, wherein

3   said information is converted by said signaling gateway to a from header, a to header, and a

4   session description protocol header respectively.

1   19.   The method of claim 18, wherein said session description protocol header

2   comprises an Internet protocol address and port for said user agent to transmit multimedia.

1   20.   The method of claim 15, further comprising the steps of:

2   transmitting said invite message from said session router to said user agent, wherein said

3   invite message comprises said media router address and port, and transmitting a circuit

4   identification code that identifies a bearer channel reserved by said switched network to

5   communicate with said user agent, thereby providing said user agent with the capability of

6   communicating with said switched network.

1   21.   The method of claim 20, further comprising the steps of:

2   designating a user agent address and port within said user agent for receiving multimedia

3   transmitted from said switched network;

4   designating a second address and second port for receiving said multimedia transmitted

5   from said switched network;

6   transmitting said second address and second port to said signaling gateway; and

7   transmitting said second address and second port, and said user agent address and port, to

8   said signaling gateway.

    22.   The method of claim 21, further comprising the steps of:

    transmitting said multimedia from said switched network to a media gateway;

    converting said multimedia from a first format to a second format;

    transmitting said multimedia to said media router via said designated second address and

    second port; and

    transmitting said multimedia to said user agent via said designated user agent address and

7   port.

1   23.   A method for discontinuing a connection between a user agent, located within a

2   packet network, and a switched network, wherein said discontinuation is initiated by said user

3   agent, comprising the steps of:

4   requesting discontinuation of said connection to said switched network, wherein said user

5   agent request is transmitted to a session router, said session router being capable of selecting at

6   least one multimedia transmission route to said user agent;

7   requesting discontinuation of said connection, wherein said session router request is

8   transmitted to a media router, said media router being capable of guiding multimedia to said user

9   agent; and

10   unbinding at least one prior established address and port utilized for providing said

11   connection between said user agent and said switched network.

1   24.   The method of claim 23, further comprising the step of transmitting said

2   discontinuation to said switched network, which, in turn, releases a bearer channel utilized for

3   providing said connection between said user agent and said switched network.

1   25.   A method for discontinuing a connection between a user agent, located within a

2   packet network, and a switched network, wherein said discontinuation is initiated by said

3   switched network, comprising the steps of:

4   requesting discontinuation of said connection between said user agent and said switched

5   network, wherein said switched network request is transmitted to a signaling gateway, said

6   signaling gateway being capable of converting signaling in a first protocol into a second

7   protocol, and from said second protocol to said first protocol;

8   requesting discontinuation of said connection, wherein said signaling gateway request is

9   transmitted to a session router, said session router being capable of selecting at least one

10   multimedia transmission route to said user agent;

11   requesting discontinuation of said connection, wherein said session router request is

12   transmitted to a media router, said media router being capable of guiding multimedia to said user

13   agent; and

14   unbinding at least one prior established address and port utilized for providing said

15   connection between said user agent and said switched network.

1   26.   The method of claim 25, wherein said first protocol is signaling system number

2   seven and said second protocol is session Internet protocol.

1   27.   A method for discontinuing a connection between a user agent, located within a

2   packet network, and a switched network, wherein said discontinuation is initiated by a media

3   router, said media router being capable of guiding multimedia to said user agent, comprising the

4   steps of:

5   requesting discontinuation of said connection between said user agent and said switched

6   network, wherein said media router request is transmitted to a session router, said session router

7   being capable of selecting at least one multimedia transmission route to said user agent;

8   unbinding at least one prior established address and port utilized for providing said

9   connection between said user agent and said switched network; and

10   discontinuing signaling associated with communication between said switched network

11   and said user agent.

1   28.   A method for establishing a call from a user agent to a switched network, the user

2   agent initiating the call, the user agent being located within a packet network, the method

3   comprising the steps of:

4   transmitting an invite message from said user agent to a session router, wherein said

5   session router is capable of selecting at least one multimedia transmission route to said user

6   agent, said invite message providing a from address and a destination address within said

7   switched network;

8   transmitting an invite message to a signaling gateway identifying an Internet protocol

9   address of said session router and said destination address within said switched network, said

10   signaling gateway being capable of converting signaling in a first protocol into a second

11   protocol, and from said second protocol to said first protocol;

12   transmitting a request for an address and port within said media router to be dedicated to

13   transmission of said multimedia between said user agent and said switched network; and

14   binding an address and port within said media router for user agent multimedia

15   transmission .

1   29.   The method of claim 28, wherein said from address further comprises an Internet

2   protocol address and port of said user agent.

1   30.   The method of claim 28, further comprising the step of allocating a circuit within

2   a media gateway for use in transmitting multimedia between said user agent and said switched

3   network, said media gateway being capable of converting multimedia provided in a first format

4   into a second format, and from said second format into said first format.

1   31.   The method of claim 28, wherein said first protocol is signaling system number

2   seven and said second protocol is session Internet protocol.

1   32.   A system for improving communication between a switched network and a packet

2   network, comprising:

3   means for converting signaling from a first protocol to a second protocol and from said

4   second protocol to said first protocol;

5   means for converting multimedia from a first format to a second format, and from said

6   second format to said first format;

7   means for selecting at least one multimedia transmission route to a destination, said

8   destination specified by said switched network; and

9   means for guiding said multimedia to said destination after conversion by said means for

10   converting multimedia.

1   33.   The system of claim 32, wherein said first format is a time division multiplexing

2   format and said second format is a real time protocol format.

1   34.   The system of claim 32, wherein said means for converting multimedia provided

2   in a first format into a second format, and from said second format into said first format, does not

3   determine the destination of said multimedia.

1   35.   The system of claim 32, wherein said first protocol is signaling system number

2   seven and said second protocol is session Internet protocol.

1   36.   The system of claim 32, wherein said second protocol is real time protocol.

1   37.   The system of claim 32, wherein said packet network is an Internet protocol

2   network.

1   38.   The system of claim 32, wherein said switched network is a public switched

2   telephone network.

1   39.   The system of claim 32, wherein said first format is a time division multiplexing

2   format.

1   40.   The system of claim 32, wherein said second format is a real time protocol

2   format.

1   41.   The system of claim 32, wherein said switched network communicates with said

2   signaling gateway via use of signaling system number seven.

1   42.   The system of claim 32, wherein said means for converting signaling in a first

2   protocol into a second protocol, and from said second protocol to said first protocol, further

3   comprises a means for storing that may be utilized for converting a received circuit identification

4   code into a session description protocol header.

1   43.   The system of claim 42, wherein said session description protocol header is

2   utilized by said destination located within said packet network to direct data packets to said

3   means for converting multimedia.

1   44.   The system of claim 42, wherein said session description protocol header

2   comprises an Internet protocol address and port for said destination located within said packet

3   network.